

AMENDED SPECIFICATION

TITLE OF THE INVENTION: TELESCOPIC LEG LADDER

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JSP

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is entitled to benefit of Provisional Patent Application Serial Number 60/275,536 filed on February 20, 2001.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

REFERENCE TO A "SEQUENCE LISTING," A TABLE, OR A COMPUTER PROGRAM LISTING APPENDIX SUBMITTED ON COMPACT DISC.

Not applicable.

BACKGROUND OF THE INVENTION

1. FIELD OF INVENTION

This invention pertains to the art of ladder devices for scaling objects.

2. DESCRIPTION OF RELATED ART INCLUDING INFORMATION DISCLOSED UNDER 37 CFR 1.97 AND 1.98

There are several ladders in the prior art that enable users to extend one or more of the legs of such ladder to gain stability in uneven ground or for use in stairs. For example, we have Patent No. 3,933,222 (Craig, Jr., 1976), which describes a ladder leveler. Nevertheless, this device does not have the same characteristics as the one subject of this patent application, which has a floor pad for grip and a mechanism to hang objects. Patent No. 4,719,990 (Markovic, 1988) discloses a stepladder for stairs but said invention does not have a telescopic device in the stepladder, nor a floor pad nor a mechanism to hang objects, unlike the Bowman invention. Patent No. 5,074,378 (Studer, 1991) relates to a multi-purpose ladder with locking mechanism for extendible legs. Again, this invention does not possess the same elements of the Bowman invention, does not have a telescopic device to extend the ladder's legs, does not have a floor pad similar to the one claimed in this application and does not have pads in the upper edges of the ladder. Patent No. 5,141,076 (Joyce et al, 1992) relates to a stepladder footpad for use with wooden ladders. That invention does not use a telescopic means to extend the ladder's legs and therefore is different from the Bowman telescopic leg ladder. Patent No. 5,265,698 (Friedel, Jr., 1993) describes a self-leveling ladder that does not have floor pads similar to the ones of the Bowman invention. It also does not have pads on the upper edges of the ladder nor a mechanism to hang objects. Patent No. 5,417,302 (McElfresh, 1995) discloses a stepladder stabilizer. This invention does not have a telescopic means to extend the ladder's legs, a security device, pads on the upper edges of the ladder nor a mechanism to hang objects, unlike the Bowman invention. Patent No. 5,577,574 (Joseph, 1996) relates to an adjustable stepladder that does not have pads on the upper edges of the ladder nor a mechanism to hang objects. Patent No. 5,590,739

(High et al, 1997) describes an adjustable extension stepladder with a tripod support leg, unlike the Bowman invention. Patent No. 5,816,364 (Christy et al, 1998) relates to a ladder leveling apparatus and does not have pads on the upper edges of the ladder nor a mechanism to hang objects, unlike the ladder subject of this application. Finally, Patent No. 5,944,142 (Milner, 1999) discloses an apparatus for elevating a stepladder, but it does not have a floor pad covered with small pointed studs for grip on uneven elevation, nor pads for grip of the upper edges of the ladder, nor a mechanism to hang objects. Therefore, the invention subject of this application is not present in the prior art and is a new and useful invention subject to patent protection.

BRIEF SUMMARY OF THE INVENTION

This invention allows the use of a stepladder on an uneven surface. The vertical legs 2 of the ladder at their base have a telescopic device 4 that may be threaded 10 or otherwise extended by use of mechanical or hydraulic 13 means that allows the individual legs 2 of the ladder to be extended and fixed by means of a securing device 5. This securing device makes it possible to extend either leg 2 of the ladder on uneven surfaces. This device will make the use of the ladder safer, quicker and easier to use on uneven surfaces.

OBJECTS & ADVANTAGES

Ladders as commonly used are often required to be erected on sites where the underlying terrain is uneven. This invention offers the following advantages over conventional ladders

1. The device can be used on uneven surfaces without recourse to using bricks, blocks and other objects to even the two legs. The invention will offer a much safer device as there is inherent danger to the use of blocks often placed precariously under one leg of the ladder.
2. The extension of one leg on an uneven surface removes the need for time to be spent trying to find materials and then balance materials under one leg. The invention is therefore a time saving device.
3. The invention is easy to use. The lay user often sees the operation of extension ladders as complex. This device is simple and easy to use.

Without doubt the greatest advantage to the invention is in the area of safety. Ladder accidents are not uncommon and they are normally caused by instability. In many cases the instability is the result of balancing the ladder on an uneven surface. This invention should significantly reduce ladder accidents.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

The present application includes 6 drawings which each represent an embodiment of the device. The scope of the telescopic leg ladder is however limited only by the scope of the claims not by a particular embodiment shown in the drawings.

FIG. 1 is a front view of the telescopic leg ladder installed in front of a house. It depicts upper pads 1 for greater grip & stability of the ladder.

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This figure also includes two vertical legs 2, a plurality of horizontal steps 3, a telescopic device 4 comprising a smaller interior telescopic leg 4 which may be extended when needed for use on uneven terrain and at user's preference. In addition, this figure includes a securing locking device 5 or metal pin, a swivel foot pad 6, a studded floor pad 7, and a mechanism of a sliding rod 8 from a rung of the ladder in order to hang objects such as a can of paint 9.

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FIG. 2 is a front view of the telescopic leg ladder with two vertical legs 2, a plurality of horizontal steps 3, a threaded screw mechanism telescopic device 10 (upper portion) inside the vertical legs 2, and foot pads 6 attached to the telescopic device. Floor pads with pointy studs 7 are attached to such foot pads.

FIG. 3 is a side view of the telescopic leg ladder including two vertical legs 2, a plurality of horizontal steps 3, a securing locking device or metal pin 5, slide tube telescopic device 11 depicting the sliding telescopic interior leg 11, foot pad 6 and studded floor pad 7. The legs of the ladder are extended by the telescopic device 11 and secured into place by the metal pin 5. Foot pads 6 and floor pads 7 attached to the telescopic device are used for the ladder to grip to the surface which may be uneven.

FIG. 4 is a side view of an embodiment of the securing device 5 which includes an interior spring 12. Claim 4 refers to this embodiment as the spring loaded mechanism.

FIG. 5 is a side view of the telescopic leg ladder with two vertical legs 2, a plurality of steps 3, foot pad 6 and a studded floor pad 7. This embodiment of the invention includes a hydraulic telescopic device 13 comprised of a hydraulic mechanism 13, pressure adjustment valve knob 14 and leg extension lever 15 which may be operated by user's hands. The hydraulic mechanism pressure adjustment valve knob 14 is used to adjust the

fluid/air pressure inside said mechanism 13 to allow the extension of a telescopic interior ladder leg when jacked down with the lever 15. The lever 15 may be moved upwards or downwards for extending the interior telescopic leg to a desired position. In addition, it may be used to relieve pressure so that the interior telescopic leg can be retracted upward.

FIG. 6 is a side view of a horizontal portable rod 8 that may be placed or slid in any chosen convenient ladder rung in order to hang objects such as but not limited to a can of paint, tool cadies, bag of nails, amongst other things that user may need.

DETAILED DESCRIPTION OF INVENTION

The invention consists of a ladder that has as an integral component a telescopic mechanism 4 for adjusting the lengths of the individual upright components. The telescopic mechanism 4 may be, but is not limited to a threaded screw mechanism 10. After extension to the required length the telescopic leg can then be secured by a security mechanism 5 such as a metal pin, but not limited to only that mechanism.

The foot pad 6 of the extension device will have an attached floor pad 7 for additional grip on uneven surfaces. Said floorpad 7 will be covered with small pointed studs that again will serve to provide a non-slip surface to grip on uneven terrain. To further provide stability to the device the upper edges of the ladder will be fitted with rubber or plastic non-slip pads 1 that will help grip and protest the surface the ladder is leaning against. The ladder will also have a system of sliding rods 8 from the rungs of the ladder so as to provide a mechanism to hang paint cans 9, nail holders, tool holders etc.

OPERATION OF INVENTION

The ladder will be leaned against the vertical object to be scaled and the height of the ladder adjusted to an appropriate level. The telescopic mechanism 4 will then be engaged so that the feet on the ladder are firmly balanced on the uneven surface. The telescopic mechanism 4 will then be secured by use of a pin 5 or other locking device.

DESCRIPTION AND OPERATION OF ALTERNATIVE EMBODIMENTS

The ladder and telescopic mechanism 4 may be produced in a range of materials that are currently used in ladder construction that allow the device to be strong, yet light. As examples it could be aluminum or fiberglass. The invention is not however limited to these materials, they are given as examples only. The scope of the invention should be determined by its claims not by a particular embodiment of the invention.

The telescopic extension device may be a simple slide tube mechanism 11, a screw threaded mechanism 10, a spring loaded (12 and 5 in FIG. 4) or hydraulic mechanism 13 including a pressure adjustment valve knob 14 and hand lever 15. Again the scope of the invention should be determined by its claims and not by a particular embodiment of the invention.

CONCLUSION, RAMIFICATION & SCOPE OF INVENTION

This invention offers a substantial opportunity to improve ladder safety and prevent accidents.